

IN THE CLAIMS

40. (New) An optical unit comprising:

a light source for emitting light therefrom;

an image display element having a light valve in which said light emitted from said light source is formed into an optical image in accordance with a video signal supplied thereto;

a light optical system for irradiating said light upon said image display element; and

a projector for projecting light emitted from said image display element,

wherein said light source has at least one reflection mirror, and an electrode wire provided at a lamp electrode within said reflection mirror, and said optical unit further comprises:

a first array lens for condensing the light emitted from said light source and forming a plural number of secondary images of said light source;

a second array lens, being disposed in a vicinity of the plural number of secondary images of said light source,

for forming each lens image of said first array lens upon said image display element; and

a polarized light converter for converting a random polarized light beam, which is emitted from said light source, to one of a S-polarized light beam, and wherein

lens cells of said first lens array are arranged in a vertical direction or a horizontal direction, and the number of said lens cells in said vertical direction or horizontal direction is equal to or greater than  $(2b/a)$ , where "a" is a width of a belt-like shadow of the electrode wire and "b" is either a vertical width or a horizontal width of one cell of said first array lens, and

said first and second array lenses and said polarized light converter are arranged so that each optical axis is nearly coincident with one another.

41. (New) A projection type display apparatus comprising:

a light source for emitting light therefrom;

an image display element having a light valve in which said light emitted from said light source is formed into

an optical image in accordance with a video signal supplied thereto;

a light optical system for irradiating said light upon said image display element;

a projector for projecting light emitted from said image display element; and

a display for displaying the light projected from said projection means,

wherein said light source has at least one reflection mirror, and an electrode wire provided at a lamp electrode within said reflection mirror, and said optical unit further comprises:

a first array lens for condensing the light emitted from said light source and forming a plural number of secondary images of said light source;

a second array lens, being disposed in a vicinity of the plural number of secondary images of said light source, for forming each lens image of said first array lens upon said image display element; and

a polarized light converter for converting a random polarized light beam, which is emitted from said light source,

to one of a S-polarized light beam or a P-polarized light beam, and wherein

lens cells of said first lens array are arranged in a vertical direction or a horizontal direction, and the number of said lens cells in said vertical direction or horizontal direction is equal to or greater than  $(2b/a)$ , where "a" is a width of a belt-like shadow of the electrode wire and "b" is either a vertical width or a horizontal width of one cell of said first array lens, and

said first and second array lenses and said polarized light converter are arranged so that each optical axis is nearly coincident with one another.

42. (New) An optical unit comprising:

a light source for emitting light therefrom;

an image display element having a light valve in which said light emitted from said light source is formed into an optical image in accordance with a video signal supplied thereto;

a light optical system for irradiating said light upon said image display element; and

a projector for projecting light emitted from said image display element,

wherein said light source has at least one reflection mirror, and an electrode wire provided at a lamp electrode within said reflection mirror, and said optical unit further comprises:

a first array lens for condensing the light emitted from said light source and forming a plural number of secondary images of said light source;

a second array lens, being disposed in a vicinity of the plural number of secondary images of said light source, for forming each lens image of said first array lens upon said image display element; and

a polarized light converter for converting a random polarized light beam, which is emitted from said light source, to one of a S-polarized light beam, and wherein

lens cells of said first lens array are arranged in a vertical direction or a horizontal direction, and the number of said lens cells in said vertical direction or horizontal direction is equal to or greater than  $(2b/a)$ , where "a" is a width of the electrode wire and "b" is either a vertical width

or a horizontal width of one cell of said first array lens,  
and

said first and second array lenses and said polarized light converter are arranged so that each optical axis is nearly coincident with one another.

43. (New) A projection type display apparatus comprising:

a light source for emitting light therefrom;

an image display element having a light valve in which said light emitted from said light source is formed into an optical image in accordance with a video signal supplied thereto;

a light optical system for irradiating said light upon said image display element;

a projector for projecting light emitted from said image display element; and

a display for displaying the light projected from said projection means,

wherein said light source has at least one reflection mirror, and an electrode wire provided at a lamp

electrode within said reflection mirror, and said optical unit further comprises:

a first array lens for condensing the light emitted from said light source and forming a plural number of secondary images of said light source;

a second array lens, being disposed in vicinity of the plural number of secondary images of said light source, for forming each lens image of said first array lens upon said image display element; and

a polarized light converter for converting a random polarized light beam, which is emitted from said light source, to one of a S-polarized light beam or a P-polarized light beam, and wherein

lens cells of said first lens array are arranged in a vertical direction or a horizontal direction, and the number of said lens cells in said vertical direction or horizontal direction is equal to or greater than  $(2b/a)$ , where "a" is a width of the electrode wire and "b" is either a vertical width or a horizontal width of one cell of said first array lens, and

said first and second array lenses and said polarized light converter are arranged so that each optical axis is nearly coincident with one another.

44. (New) An optical unit, comprising:

a first array lens for condensing lights emitted from a light source, thereby forming a plural number of secondary light source images;

a second array lens, being disposed in vicinity of said plural number of secondary light source images, for forming a lens image of said first array lens;

a separation portion for separating the light from either one of said light source and second array lens into P-polarized light and S-polarized light; and

a polarized light conversion portion for changing a direction of polarization of either one of the P-polarized light and S-polarized light emitted from said separation portion, wherein said first array lens, said second array lens and said separation portion are disposed so that optical axes thereof lie nearly on one straight line.

45. (New) The optical system, as defined in the claim 44, wherein, further said polarized light conversion portion is disposed, so that an optical axis thereof also lies nearly



on the one straight line, with said first array lens, said second array lens and said separation portion.

46. (New) The optical system, as defined in the claim 44, wherein, cells of said first array lens aligned horizontally or vertically by  $(2b/a)$  lines thereof, where "a" is width of strip-like shadow of an electric wire of said light source, and "b" width of size in either one of vertical width and horizontal width of one cell of said first array lens.

47. (New) The optical system, as defined in the claim 45, wherein,

cells of said first array lens aligned horizontally or vertically by  $(2b/a)$  lines thereof, where "a" is width of strip-like shadow of an electric wire of said light source, and "b" width of size in either one of vertical width and horizontal width of one cell of said first array lens.

48. (New) An image display apparatus, for forming an optical image depending upon an image signal, comprising:

an image display element; and

a lighting optical system for irradiating a light therefrom upon said image display element, wherein,

said lighting optical system comprises:

a first array lens for condensing lights emitted from a light source, thereby forming a plural number of secondary light source images;

a second array lens, being disposed in vicinity of said plural number of secondary light source images, for forming a lens image of said first array lens;

a separation portion for separating the light from either one of said light source and said second array lens into P-polarized light and S-polarized light; and

a polarized light conversion portion for changing a direction of polarization of either one of the P-polarized light and S-polarized light emitted from said separation portion, wherein said first array lens, said second array lens and said separation portion are disposed so that optical axes thereof lie nearly on one straight line.

49. (New) The image display apparatus, as defined in the claim 48, wherein, further said polarized light conversion portion is disposed, so that an optical axis thereof also lies nearly on the one straight line, with said first array lens, said second array lens and said separation portion.

50. (New) The image display apparatus, as defined in the claim 48, wherein, cells of said first array lens aligned horizontally or vertically by  $(2b/a)$  lines thereof where "a"

is width of strip-like shadow of an electric wire of said light source, and "b" width of size in either one of vertical width and horizontal width of one cell of said first array lens.

51. (New) The image display apparatus, as defined in the claim 49, wherein, cells of said first array lens aligned horizontally or vertically by  $(2b/a)$  lines thereof, where "a" is width of strip-like shadow of an electric wire of said light source, and "b" width of size in either one of vertical width and horizontal width of one cell of said first array lens.